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(54) **METHOD, SYSTEM AND ENTITY FOR CALLBACK IN CASE OF PREMATURE INTERRUPTION OF AN EMERGENCY SESSION**

VERFAHREN, SYSTEM UND EINHEIT ZUM RÜCKRUFEN IM FALL EINER VORZEITIGEN
UNTERBRECHUNG EINER NOTFALLSITZUNG

PROCÉDÉ, SYSTÈME ET ENTITÉ DE PROCÉDURE DE RAPPEL EN CAS D'INTERRUPTION
PRÉMATURÉ D'UNE SESSION D'URGENCE

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Description

[0001] The invention generally relates to callback in case of a session, e.g. an emergency session, and in particular to a callback feature when the UE (User Equipment) does not have USIM (Universal Subscriber Identity Module).

[0002] When a caller initiates a session, e.g. calls to an emergency center, and accidentally the session is not properly established, e.g. the call is lost, then there may exist a need that the called party, e.g. the emergency center has to be able to recall to the caller. For example a kid may call to the emergency center, simply tells "the house is on fire", and then hangs up. In this case, it would be preferable if the emergency center could call back and ask e.g. for the street address. For such a call-back, the called entity, e.g. the emergency center needs some information on the identity, e.g. number, of the call originating equipment. The invention aims at providing a solution for such problem in case the caller does not provide such identity information, e.g. when the UE does not have USIM.

[0003] US 6,038,437 discloses a system for handling an emergency call originating from a cellular radiotelephone. Upon receipt of the call, the cellular radiotelephone is assigned a temporary substitute Mobile Identification Number (MIN) by a receiving A-side or B-side cellular system MTSO. Upon termination of the emergency call, a call-back to the cellular radiotelephone is routed to both of the A-side and B-side MTSOs, using the substitute MIN, by a Public Switched Telecommunications Network. Both A-side and B-side MTSOs issue a page order message to cellular radiotelephone by transmitting to the MIN. Paging order confirmation messages, conveying the MIN, are evaluated for a match with a unique Electronic Serial Number.

[0004] US 5,579,385 describes a telecommunication network in which telecommunication connections are directed from a telecommunication terminal equipment on a transmission side via an origin node and transit nodes to a telecommunication terminal equipment on the reception side. An origin node number, the A call number, the destination node identity number and also the B call number are inserted into signalling information of the connection to be set up. In the nodes involved in the setup of the connection it is checked whether the A call number is to be modified, e.g. supplemented or abbreviated.

[0005] US 5,712,900 presents a structure in which a first mobile switching center (MSC) serving a mobile station assigns a first temporary local directory number (TLDN) to the call connection when the mobile station originates an emergency call connection towards a Public Safety Answering Point (PSAP). The assigned TLDN is also utilized as the calling party number (CgPn). Subsequently, whenever the mobile station roams out of the first MSC coverage area, the data correlating the first TLDN with the Mobile Station Integrated Service Digital Network (MSISDN) number associated with the roaming

mobile station are maintained by the first MSC if a timer assigned to the first TLDN has not expired. Alternatively, the first MSC may also communicate with the second MSC newly serving the mobile station to request and receive a second TLDN associated with the second MSC. Whenever the PSAP requests a call back connection in response to a disconnection of the original emergency call connection, the first MSC forwards the received call setup signal using the stored MSISDN or second TLDN as a new called party number.

[0006] US 5,937,344 discloses a system for handling an emergency call. Upon receipt of an emergency call originating from a cellular radiotelephone and communicated through one of A-side and B-side cellular systems, the cellular radiotelephone is assigned a temporary substitute Mobile Identification Number (MIN) by the receiving A-side or B-side cellular system MTSO. Upon termination of the emergency call, a call-back to the cellular radiotelephone is routed to both of the A-side and B-side MTSOs, using the substitute MIN, by the Public Switched Telecommunications Network. Both A-side and B-side MTSOs issue a page order message to cellular radiotelephone by transmitting to the MIN. Paging order confirmation messages, conveying the MIN, are evaluated for a match with a unique Electronic Serial Number.

[0007] The present invention provides a method as defined in claim 1 or any one of the dependent claims 2 to 10, a system as defined in claim 11 or any one of the dependent claims 12 to 20, and an entity as defined in claim 21 or 22.

[0008] When a session, e.g. an emergency session, from an equipment, e.g. a UE, to an entity, e.g. an emergency center, has been prematurely terminated, a call-back can be established from the entity to the equipment initiating the session from the equipment to/via the entity. The entity and/or nodes involved in handling the session, store information for the session, the information including an address of at least one other node in the signalling path, the at least one other node in case of callback being used to carry signalling related to callback from the entity to the equipment. The stored information may be different for each node or entity, and also includes the identity of the equipment.

[0009] The information for the session is preferably stored for a predetermined time after the session initiation.

[0010] The nodes, e.g. IMS nodes, store the information preferably in the form of records for the session-initiating equipment, e.g. the emergency-session-initiating equipment, e.g. user equipment, UE, preferably during a certain time from the beginning of the initiation of the session, e.g. emergency session. The records will usually be different for the different nodes and include an address of at least one other node in the signalling path, the at least one other node in case of callback being used to carry signalling related to callback from the entity to the equipment. The address can be the IP address of the next or preceding node in the signalling path. The record

also includes an equipment (UE) identity e.g. IMEI, emergency IMSI, UE IP address. With this information, it is possible to carry signalling related to callback from the called terminal (e.g. emergency center) or any intermediate node to the UE. This is in particular of advantage when the UE does not have USIM, and thus normal IMS procedures can not be used to route callback signalling to the UE.

[0011] The information stored in the record is preferably received when receiving UE initiated SIP INVITE.

[0012] In accordance with one aspect of the invention, a method, system, and device are provided for allowing callback for emergency sessions even if the UE does not have USIM.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Fig. 1 illustrates a basic structure and message flow of an embodiment of a communication system and method enabling callback in an emergency case, and

Fig. 2 shows a basic structure and message flow of another embodiment of a communication system and method enabling callback in an emergency case.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0014] In the embodiment of the invention shown in Fig. 1, the Emergency Center, EC, is in the CS, circuit-switched, domain. The user equipment, UE, is in the PS, packet-switched, domain. The PS domain includes a P-CSCF (Proxy Call State Control Function), a S-CSCF (Serving Call State Control Function), and a MGCF (Media Gateway Control Function). A SGW (Signaling Gateway) provides signaling interworking between the CS-based network containing the EC and the packet-based IP network containing P-CSCF, S-CSCF and MGCF.

[0015] All IMS nodes P-CSCF, S-CSCF, MGCF, and SGW (IMS=IP Multimedia Subsystem) store the IP address of the next IMS node ("next" referring to the node to which the signalling is addressed from the actual node in case of call-back) and the equipment identity during a certain time (e.g. 5 min or another value between 1 to 10 min), defined e.g. by a timer provided in the node, to initiate a new session towards the UE if callback is needed. The P-CSCF stores UE IP address and the equipment identity, the S-CSCF stores P-CSCF IP address and the equipment identity, and MGCF stores S-CSCF IP address and the equipment identity. The SGW stores MGCF IP address and the equipment identity. In case there is a one-to-one relation between MGCF and SGW, the SGW permanently knows the MGCF address and does not have to store the MGCF address for the actual

session).

[0016] Also emergency center EC knows SGW SS7 address and the equipment identity which are stored in EC or a database accessible to EC.

[0017] For establishing an emergency session, the UE sends to the P-CSCF a call set-up message, preferably a SIP (Session Initiation Protocol) message such as an INVITE message. This message preferably includes an indication of emergency session. If the indication is missing then the P-CSCF shall detect the emergency session. The P-CSCF stores information, i.e. a record for UE, e.g. "IMEI@, UE IP address", and forwards the call set-up message, e.g. INVITE message to the S-CSCF which responds by storing information, i.e. a record for UE, e.g. "IMEI, P-CSCF address", and forwarding the call set-up message, e.g. INVITE message, to the MGCF. The MGCF again stores information, i.e. a record for UE, e.g. "IMEI, S-CSCF address", and sends an IP-IAM (Internet Protocol Initial Address Message) to the SGW. The SGW also stores information, i.e. a record for UE, e.g. "IMEI, MGCF address", and sends an IAM (Initial Address Message) to the EC.

[0018] The emergency session is then normally handled as indicated in Fig. 1 by block "EMERGENCY CALL PROCEEDING".

[0019] If the emergency session should be prematurely released, e.g. before normal completion thereof, as indicated by block "EMERGENCY CALL RELEASE" the EC starts a callback procedure as shown in Fig. 1.

[0020] In detail, the EC sends an IAM message with the equipment identity (e.g. in the Calling Line Identity parameter) to the SGW. The SGW uses the equipment identity to find the MGCF IP address and it uses the MGCF IP address to send an IP-IAM message with the equipment identity to the MGCF. The MGCF uses the equipment identity to find the S-CSCF IP address and it uses the S-CSCF IP address to send an emergency initiation message, e.g. INVITE, to the S-CSCF. The S-CSCF uses the equipment identity to find the P-CSCF IP address and it uses the P-CSCF IP address to forward the emergency initiation message, e.g. INVITE, to the P-CSCF. The P-CSCF uses the equipment identity to find the UE IP address and it uses the UE IP address to send an emergency initiation message, e.g. INVITE, to the UE. The P-CSCF may remove the equipment identity from an emergency initiation message, e.g. INVITE before sending it to the UE.

[0021] Thereafter, the emergency call proceeding can be continued in the customary manner.

[0022] In the embodiment shown in Fig. 2, the emergency center EC is in the IMS domain. Hence no MGCF or SGW is needed.

[0023] All IMS nodes store the IP address of the next IMS node and the equipment identity during a certain predetermined time (e.g. 5 min) defined e.g. by a timer provided in the node, to initiate a new session towards the UE if callback is needed. The P-CSCF stores UE IP address and the equipment identity, the S-CSCF stores

P-CSCF IP address and the equipment identity, and the Emergency center stores S-CSCF IP address and the equipment identity.

[0024] In detail, for establishing an emergency session, the UE sends to the P-CSCF a call set-up message, preferably a SIP (Session Initiation Protocol) message such as an INVITE message. This message should include an indication of emergency session. If the indication is missing then the P-CSCF shall detect the emergency session. The P-CSCF stores a record for UE, e.g. "IMEI, UE IP address", and forwards the call set-up message, e.g. INVITE message to the S-CSCF which responds by storing a record for UE, e.g. "IMEI, P-CSCF address", and forwarding the call set-up message, e.g. INVITE message, to the EC. The EC stores a record for UE, e.g. "IMEI, S-CSCF address", and initiates the emergency session.

[0025] If the emergency session should be released before normal completion thereof as indicated by block "EMERGENCY CALL RELEASE" the EC starts a callback procedure as shown in Fig. 2.

[0026] When call-back takes place then EC sends INVITE message (according to the IP address) and the equipment identity. In detail, the EC sends an emergency initiation message, e.g. INVITE with the equipment identity, to the S-CSCF using the IP address thereof as stored in its record for UE. The S-CSCF uses the equipment identity to find the P-CSCF IP address and it uses the P-CSCF IP address to send the emergency initiation message, e.g. INVITE, to the P-CSCF. The P-CSCF uses the equipment identity to find the UE IP address and it uses the UE IP address to send an emergency initiation message, e.g. INVITE, to the UE. The P-CSCF may remove the equipment identity from an emergency initiation message, e.g. INVITE before sending it to the UE.

[0027] Thereafter, the emergency call proceeding can be continued in the customary manner.

[0028] Thus, the address, e.g. IP address, of the next node is derived using the equipment identity. The equipment identity is, in this embodiment, the key for finding the IP address. The equipment identity and IP address are used as a pair.

[0029] In the embodiments of the invention, the signalling bearer is preferably kept during certain time from the beginning of the signalling bearer activation.

[0030] The identity of the equipment can also be sent from SGW to EC or vice versa in an ISUP message (i.e. IAM). The identity can be carried in the Calling Line Identity parameter of the ISUP message. This feature not only applies with regard to the case of callback but can also be used generally as well.

Claims

1. A method for enabling a callback from an entity to an equipment initiating an emergency session, wherein the entity and/or nodes involved in handling

the emergency session, store information for the emergency session, the information including an identity of the equipment initiating an emergency session, and an address of at least one other node in the signalling path, the at least one other node in case of callback being used to carry signalling related to callback from the entity to the equipment, wherein, if the session is prematurely released, the entity starts a callback procedure.

2. The method of claim 1, wherein the entity is an emergency center.
3. The method of claim 1 or 2, wherein the information for the session is stored for a predetermined time after the session initiation.
4. Method according to any one of the preceding claims, wherein the information is received when receiving a message from the equipment or another node for initiating the session.
5. Method according to claim 4, wherein the message is a session initiation protocol, SIP, message.
6. Method according to any one of the preceding claims, wherein signalling bearer for establishing the session is maintained for a predetermined time from the beginning of the signalling bearer activation.
7. Method according to any one of the preceding claims, wherein the nodes are internet protocol multimedia subsystem, IMS, nodes and include proxy call state control function, P-CSCF, serving call state control function, S-CSCF, or media gateway control function, MGCF, node.
8. Method according to claim 3 or 6, wherein the nodes include a timer for measuring the predetermined time.
9. The method of any one of the preceding claims, wherein the entity is in circuit switched, CS, domain.
10. The method of any one of the preceding claims, wherein the equipment identity is carried in a Calling Line Identity parameter of an ISDN user part, ISUP, message to a signalling gateway.
11. System for enabling a callback from an entity to an equipment adapted to initiate an emergency session, wherein the entity and/or nodes involved in handling the emergency session, are implemented to store information for the emergency session, the information including an identity of the equipment, and an address of at least one other node in the signalling path, the at least one other node in case of callback being adapted to carry signalling related to callback

from the entity to the equipment, wherein the entity is adapted to start a callback procedure, if the session is prematurely released.

12. The system of claim 11, wherein the entity is an emergency center. 5
13. The system of claim 11 or 12, comprising a memory for storing the information for the session for a predetermined time after the session initiation. 10
14. System according to any one of claims 11 to 13, wherein the nodes are adapted to store the information when receiving a message from the equipment or another node for initiating the session. 15
15. System according to claim 14, wherein the message is a SIP message.
16. System according to any one of claims 11 to 15, wherein the nodes are adapted to maintain signalling bearer for establishing the session for a predetermined time from the beginning of the signalling bearer activation. 20
17. System according to any one of claims 11 to 16, wherein the nodes are IMS nodes and include P-CSCF, S-CSCF, or MGCF node. 25
18. System according to claim 17, wherein the nodes include a timer for measuring the predetermined time. 30
19. System of any one of claims 11 to 18, wherein the entity is in CS domain. 35
20. System according to any one of claims 11 to 19, wherein the equipment identity is carried in the Calling Line Identity parameter of the ISUP message to a Signalling Gateway. 40
21. An entity for enabling callback from said entity to an equipment to initiate an emergency session, the entity having: 45

means for receiving a first emergency session initiation message from a first node adapted in case of callback to carry signalling related to callback from the entity to the equipment;

means for storing information for the emergency session, the information including at least identity of said equipment, 50

an address of at least said first node in a signalling path from said equipment to said entity,

means for sending a second emergency session initiation message to said first node based on said stored information, thereby starting a callback procedure, if the initiated session is pre- 55

maturely released.

22. The entity of claim 21, wherein the entity is an emergency center.

Patentansprüche

1. Verfahren zum Ermöglichen eines Rückrufs von einer Entität an ein eine Notrufsitzung initiiierendes Gerät, wobei die in einer Abwicklung der Notrufsitzung involvierte(n) Entität und/oder Knoten Informationen für die Notrufsitzung speichern und die Informationen eine Identität des eine Notrufsitzung initiiierenden Geräts und eine Adresse von zumindest einem anderen Knoten in dem Signalisierungspfad enthalten, wobei der zumindest eine andere Knoten im Falle eines Rückrufs verwendet wird, um eine auf einen Rückruf bezogene Signalisierung von der Entität an das Gerät zu übertragen, wobei die Entität eine Rückrufprozedur startet, wenn die Sitzung vorzeitig abgebaut wird.
2. Verfahren nach Anspruch 1, wobei die Entität ein Notrufzentrum ist.
3. Verfahren nach Anspruch 1 oder 2, wobei die Informationen für die Sitzung für eine vorbestimmte Zeit nach der Sitzungsinitiiierung gespeichert werden.
4. Verfahren nach einem der vorhergehenden Ansprüche, wobei die Informationen empfangen werden, wenn eine Nachricht von dem Gerät oder einem anderen Knoten, zum Initiieren der Sitzung empfangen wird.
5. Verfahren nach Anspruch 4, wobei die Nachricht eine Sitzungsinitiiierungsprotokoll-(SIP)-Nachricht ist.
6. Verfahren nach einem der vorhergehenden Ansprüche, wobei der Signalisierungsträger zum Aufbauen der Sitzung für eine vorbestimmte Zeit seit dem Beginn der Signalisierungsträgeraktivierung aufrechterhalten wird.
7. Verfahren nach einem der vorhergehenden Ansprüche, wobei die Knoten Internetprotokoll-Multimedia-subsystem-(IMS)-Knoten sind und einen Knoten einer Proxy-Anrufzustandssteuerungsfunktion, P-CSCF, einer Aktiv-Anrufzustandssteuerungsfunktion, S-CSCF, oder einer Mediatgatewaysteuerungsfunktion, MGCF, enthalten.
8. Verfahren nach Anspruch 3 oder 6, wobei die Knoten einen Zeitmesser zum Messen der vorbestimmten Zeit enthalten.
9. Verfahren nach einem der vorhergehenden Ansprüche

che, wobei die Entität in einer leitungsvermittelten, CS, Domäne ist.

10. Verfahren nach einem der vorhergehenden Ansprüche, wobei die Geräteidentität in einem Parameter einer Anrufende-Leitungsidentität einer Nachricht eines ISDN-Nutzerteils, ISUP, an ein Signalisierungsgateway übertragen wird. 5
11. System zum Ermöglichen eines Rückrufs von einer Entität an ein zum Initiieren einer Notrufsitzung angepasstes Gerät, wobei die in einer Abwicklung der Notrufsitzung involvierte(n) Entität und/oder Knoten implementiert sind, um Informationen für die Notrufsitzung zu speichern, und die Informationen eine Identität des Geräts und eine Adresse von zumindest einem anderen Knoten in dem Signalisierungspfad enthalten, wobei der zumindest eine andere Knoten im Falle eines Rückrufs angepasst ist, um eine auf einen Rückruf bezogene Signalisierung von der Entität an das Gerät zu übertragen, wobei die Entität angepasst ist, eine Rückrufprozedur zu starten, wenn die Sitzung vorzeitig abgebaut wird. 10
12. System nach Anspruch 11, wobei die Entität ein Notrufzentrum ist. 15
13. System nach Anspruch 11 oder 12, mit einem Speicher zum Speichern der Informationen für die Sitzung für eine vorbestimmte Zeit nach der Sitzungsinitiierung. 20
14. System nach einem der Ansprüche 11 bis 13, wobei die Knoten angepasst sind, die Informationen zu speichern, wenn sie eine Nachricht von dem Gerät oder einem anderen Knoten zum Initiieren der Sitzung empfangen. 25
15. System nach Anspruch 14, wobei die Nachricht eine SIP-Nachricht ist. 30
16. System nach einem der Ansprüche 11 bis 15, wobei die Knoten angepasst sind, den Signalisierungsträger zum Aufbauen der Sitzung für eine vorbestimmte Zeit seit dem Beginn der Signalisierungsträgeraktivierung aufrechtzuerhalten. 35
17. System nach einem der Ansprüche 11 bis 16, wobei die Knoten IMS-Knoten sind und einen P-CSCF-, einen S-CSCF- oder einen MGCF-Knoten enthalten. 40
18. System nach Anspruch 17, wobei die Knoten einen Zeitmesser zum Messen der vorbestimmten Zeit enthalten. 45
19. System nach einem der Ansprüche 11 bis 18, wobei die Entität in einer CS-Domäne ist. 50

20. System nach einem der Ansprüche 11 bis 19, wobei die Geräteidentität in einem Parameter einer Anrufende-Leitungsidentität der ISUP-Nachricht an ein Signalisierungsgateway übertragen wird.

21. Entität zum Ermöglichen eines Rückrufs von der Entität an ein Gerät zum Initiieren einer Notrufsitzung, wobei die Entität aufweist:

eine Einrichtung zum Empfangen einer ersten Notrufsitzungsinitiierungsnachricht von einem ersten Knoten, der angepasst ist, im Falle eines Rückrufs eine auf einen Rückruf bezogene Signalisierung von der Entität an das Gerät zu übertragen;
eine Einrichtung zum Speichern von Informationen für die Notrufsitzung, wobei die Informationen zumindest enthalten
eine Identität des Geräts,
eine Adresse von zumindest einem ersten Knoten in einem Signalisierungspfad von dem Gerät an die Entität,
eine Einrichtung zum Senden einer zweiten Notrufsitzungsinitiierungsnachricht an den ersten Knoten basierend auf den gespeicherten Informationen, wodurch eine Rückrufprozedur gestartet wird, wenn die Sitzung vorzeitig abgebaut wird.

22. Entität nach Anspruch 21, wobei die Entität ein Notrufzentrum ist.

Revendications

1. Procédé pour activer un rappel automatique d'une entité à un équipement initiant une session d'urgence, dans lequel l'entité, et/ou des noeuds impliqués dans le traitement de la session d'urgence, stockent des informations connexes à la session d'urgence, les informations comportant une identité de l'équipement initiant une session d'urgence, et une adresse d'au moins un autre noeud sur le trajet de signalisation, ledit au moins un autre noeud en cas de rappel automatique étant utilisé pour transporter une signalisation connexe au rappel automatique de l'entité à l'équipement, dans lequel, lorsque la session est abandonnée prématurément, l'entité initie une procédure de rappel automatique.
2. Procédé selon la revendication 1, dans lequel l'entité est un centre d'urgence.
3. Procédé selon la revendication 1 ou 2, dans lequel les informations connexes à la session sont stockées pendant un temps prédéterminé après l'initiation de session.

4. Procédé selon l'une quelconque des revendications précédentes, dans lequel les informations sont reçues lors de la réception d'un message de l'équipement ou d'un autre noeud pour l'initiation de la session. 5
5. Procédé selon la revendication 4, dans lequel le message est un message de protocole d'ouverture de session, SIP. 10
6. Procédé selon l'une quelconque des revendications précédentes, dans lequel la porteuse de signalisation pour l'établissement de la session est conservée pendant un temps prédéterminé dès le début de l'activation de la porteuse de signalisation. 15
7. Procédé selon l'une quelconque des revendications précédentes, dans lequel les noeuds sont des noeuds de sous-système multimédia de protocole Internet, IMS, et comportent un noeud de fonction de commande de session d'appel par serveur mandataire, P-CSCF, un noeud de fonction de commande de session d'appel de desserte, S-CSCF, ou un noeud de fonction de commande de passerelle de média, MGCF. 20
8. Procédé selon la revendication 3 ou 6, dans lequel les noeuds comprennent un chronomètre pour calculer le temps prédéterminé. 25
9. Procédé selon l'une quelconque des revendications précédentes, dans lequel l'entité est dans le domaine à commutation de circuits, CS. 30
10. Procédé selon l'une quelconque des revendications précédentes, dans lequel l'identité d'équipement est acheminée, dans un paramètre d'identité de ligne appelante d'un message de partie d'utilisateur de réseau numérique à intégration de services (ISDN), ISUP, à une passerelle de signalisation. 35
11. Système en vue d'activer un rappel automatique d'une entité à un équipement adapté pour initier une session d'urgence, dans lequel l'entité et/ou des noeuds impliqués dans le traitement de la session d'urgence, sont implémentés pour stocker des informations connexes à la session d'urgence, les informations comportant une identité de l'équipement et une adresse d'au moins un autre noeud sur le trajet de signalisation, ledit au moins un autre noeud, en cas de rappel automatique, étant adapté pour transporter une signalisation connexe au rappel automatique de l'entité à l'équipement, dans lequel l'entité est adaptée en vue d'initier une procédure de rappel automatique lorsque la session est abandonnée prématurément. 40
12. Système selon la revendication 11, dans lequel l'entité est un centre d'urgence. 45
13. Système selon la revendication 11 ou 12, comportant une mémoire pour stocker les informations connexes à la session pour un temps prédéterminé après l'initiation de session. 50
14. Système selon l'une quelconque des revendications 11 à 13, dans lequel les noeuds sont adaptés pour stocker les informations lors de la réception d'un message de l'équipement ou d'un autre noeud pour l'ouverture de la session. 55
15. Système selon la revendication 14, dans lequel le message est un message de protocole d'ouverture de session, SIP.
16. Système selon l'une quelconque des revendications 11 à 15, dans lequel les noeuds sont adaptés pour maintenir une porteuse de signalisation pour l'établissement de la session sur un temps prédéterminé dès le début de l'activation de porteuse de signalisation.
17. Système selon l'une quelconque des revendications 11 à 16, dans lequel les noeuds sont des noeuds de sous-système multimédia de protocole Internet, IMS, et comportent un noeud de fonction de commande de session d'appel par serveur mandataire, P-CSCF, un noeud de fonction de commande de session d'appel de desserte, S-CSCF, ou un noeud de fonction de commande de passerelle de média, MGCF.
18. Système selon la revendication 17, dans lequel les noeuds comportent un chronomètre pour calculer le temps prédéterminé.
19. Système selon l'une quelconque des revendications 11 à 18, dans lequel l'entité est dans le domaine à commutation de circuits, CS.
20. Système selon l'une quelconque des revendications 11 à 19, dans lequel l'identité d'équipement est acheminée, dans le paramètre d'identité de ligne appelante du message de partie d'utilisateur de réseau numérique à intégration de services (ISDN), ISUP, à une passerelle de signalisation.
21. Entité en vue d'activer un rappel automatique de ladite entité à un équipement en vue d'initier une session d'urgence, l'entité présentant :
des moyens pour recevoir un premier message d'initiation de session d'urgence d'un premier noeud adapté, en cas de rappel automatique, afin de transporter une signalisation connexe au rappel automatique, de l'entité à l'équipement ;

des moyens pour stocker des informations connexes à la session d'urgence, les informations comportant au moins

l'identité dudit équipement,

une adresse dudit au moins premier noeud sur 5

le trajet de signalisation dudit équipement à ladite entité,

des moyens pour transmettre un second message d'initiation de session d'urgence audit premier noeud sur la base desdites informations 10

stockées, initiant par conséquent une procédure de rappel automatique, lorsque la session initiée est abandonnée prématurément.

- 22.** Entité selon la revendication 21, dans laquelle l'entité 15
est un centre d'urgence.

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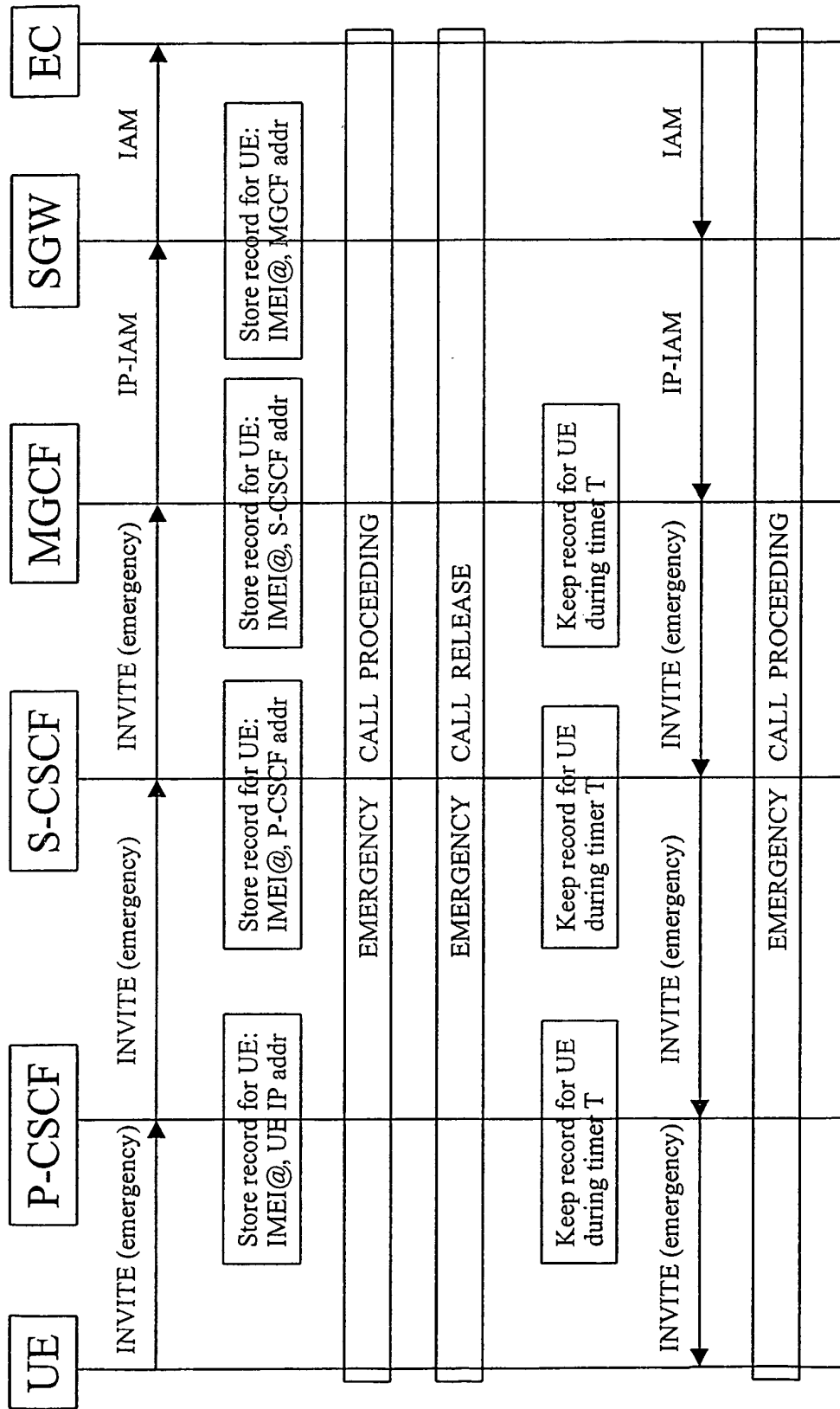


FIG. 1

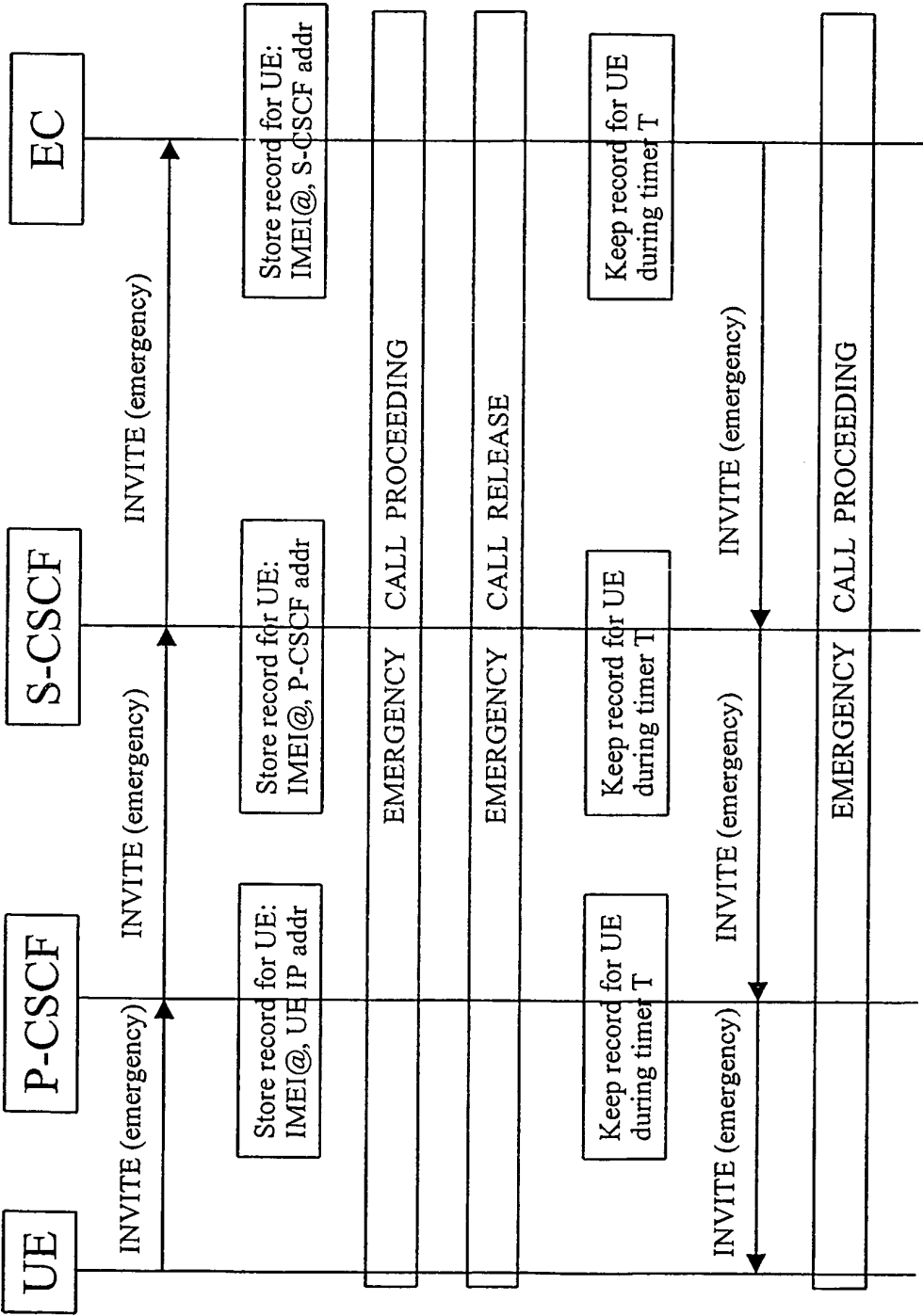


FIG. 2

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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